

ABSTRACT OF THE DISCLOSURE

The object of the invention is to provide an iron based sintered body suitable for being enveloped in light metal alloy such as an aluminum alloy by casting, and a method for producing the same. A mixed powder is prepared by mixing an iron based powder, a copper powder and a graphite powder blended so that the Cu content and the C content are 5 to 40% by mass and 0.5 to 2.5% by mass, respectively, in the mixed powder. A lubricant powder and a fine particle powder for improving machinability may be further added in the mixed powder. Then, the mixed powder is filled into a mold formed to a green compact, and is sintered into a sintered body so that the sintered body has a desired average thermal expansion coefficient. The surface of the sintered body may be adjusted to have a surface roughness Rz of 10 to 100 μm optionally by applying a shot blast treatment or by a shot blast treatment and an additional steam treatment. This process permits the sintered body to be enhanced in an adhesive property and bonding strength while being improved in enveloping casting property when the sintered body is enveloped in the light metal alloy by casting. A martensitic stainless steel powder or ferritic stainless steel powder may be used instead of the pure iron powder, or Cr, Mo and W powders may be further blended.